Table 2. Relationship of the EPA SAB framework ecological attributes to EPA Region 5 CrEAM and TEAP.

Category	Subcategory	SAB example measure	TEAP criterion
ECOLOGICAL PROCESSES			
Energy flow	primary production	tree growth	NONE
	net ecosystem production	CO_2 flux	NONE
	growth efficiency	carbon transfer	NONE
Material flow	organic C cycling	organic matter quality	NONE
	N & P cycling	N-fixation capacity	NONE
	other nutrient cycling	input/output budgets	NONE
LANDSCAPE CONDITION			
Extent of habitat types		perimeter-area ratio	regularity of ecosystem boundary
			contiguous size of undeveloped areas
Landscape condition		number of habitat types	land cover rarity

Category	Subcategory	SAB example measure	TEAP criterion
			land cover diversity
			significant stream segments
			contiguous land cover
Landscape pattern		contagion	appropriateness of land cover
			land cover suitability
			urban & agricultural disturbance
			road density
NATURAL DISTURBANCE REGIMES			
	frequency	recurrence interval	NONE
	intensity		NONE
	extent	spatial extent	NONE
	duration	length of event	NONE
BIOTIC CONDITION			
Ecosystems & communities	community extent	extent of successional state	NONE
	community composition	presence of focal species	number of rare taxa
			number of rare species
			species rarity using G/S rankings
	trophic structure	feeding guilds	NONE
	community dynamics	predation rate	NONE

Category	Subcategory	SAB example measure	TEAP criterion
	physical structure	tree canopy height	NONE
Species & populations	population size	density	NONE
	genetic diversity	degree of heterozygosity	NONE
	population structure	age structure	NONE
	population dynamics	dispersal rates	NONE
	habitat suitability	focal species requirements	Combination of GIS layers
Organism condition	physiological status	hormone levels	NONE
	symptoms of disease	tumors, lesions	NONE
	signs of disease	tissue burden of contaminants	TRI weighted air/water releases
CHEMICAL AND PHYSICAL CHARACTERISTICS			
Nutrient concentrations	Nitrogen	concentration of N	water quality
	Phosphorus	concentration of total P	water quality
	other nutrients	concentration of Ca, K, Si	water quality
Trace inorganic & organic chemicals	metals	Cu, Zn in sediment	NONE
	trace elements	Se in water and soil	NONE
	organic compounds	methyl-Hg	NPL (Superfund) Sites
			RCRA corrective action sites

Category	Subcategory	SAB example measure	TEAP criterion
Chemical properties	pH	pH in water & soil	NONE
	dissolved O	DO in streams	water quality
	salinity	conductivity	NONE
	organic matter	soil organic matter	NONE
	other	buffering capacity	NONE
Physical parameters	soil/sediment	temperature, texture	soil permeability, aquifer/geology ranking
	air/water	concentration of particulates	air quality
			change in elevation
			airport noise
			temperature & precipitation maxima
HYDROLOGY & GEOMORPHOLOGY			
Surface & groundwater flows	pattern of surface flow	water level fluctuations	watershed obstructions
			waterway impoundments
	hydrodynamics	water movement	NONE
	pattern of groundwater flows	depth to groundwater	NONE
	spatial salinity patterns	surface salinity gradients	NONE
	water storage	aquifer capacity	NONE
Dynamic structural characteristics	channel morphology complexity	length of natural shoreline	NONE
	dist. of connected floodplain	2yr or 10yr floods	NONE

Category	Subcategory	SAB example measure	TEAP criterion
	aquatic physical habitat	pool-riffle ratio	NONE
Sediment & material transport	sediment movement	sediment deposition	NONE
	particle size distribution	distribution of grain size	NONE